MEASUREMENT OF MINDS.

Methods for Testing Capacity and Accuracy in Observation.

Prof. Thomas Wilson, of the Smithsonian Institution, Indicates How Differences in Mental Conditions May Be Found by Experiments.

A majority of the persons who have given much thought to the subject, acknowledge that the educational methods in vogue are very imperfect. In other words, nature is left in the background, and stilted artificial means employed in "teaching the young idea how to shoot." It is apparent that the faculty of observation should be the first to receive attention in the child who, in general, rejoices in that faculty in a very eminent degree, insomuch that such competent critics as Coleridge and Dickens define genius as dependent essentially on the retention of this fresh and vigorous power of observation possessed in infancy.

That a school should combine, with the most valuable and practical training methods, a just system for establishing the comparative mental calibres of its pupils, is generally admitted; hence classes and competitive examinations. A method which includes the most adequate training possible of the faculty of observation in the child, and the accurate determination of the respective mental capacities and capabilities of children, would seem a most important desideratum in the present confused and unsatisfactory condition of education.

Prof. Thomas Wilson, of the Smithsonian Institution, in regard to the possibility of testing the strength of the faculty of observation in various pupils, says:

"Examine the subject (pupil) for the truthfulness, the fidelity of his sensation. First, as to his sense of color. The question may be as to what sensation is produced upon his mind by the sight of a strand of worsted of a given color. Does green give the proper sensation, or purple or red? This is a test of the correctness of the impression as to color. The operation is done leisurely. Rapidity is not now required; it is accuracy which is being tested.

"As the examination of the subject progresses mark on the chart his successes or failures. The fault in his sense of color may result from a species of disease, but now we test his sensation as to size, form, etc., which is not affected by disease, but is a question purely of truthfulness of sensation or impression. Show him a yard stick and let him mark the middle of it. Divide it into feet or inches. Let him do it slowly, but correctly. Compare two lengths; draw parallel lines, some true and some untrue. Try him with angles right and other than right. Invent methods to test the correctness of the impression on his mind as derived from the operation on his sense of sight.

"As a second lesson in the course, give him the chalk and let him mark on the board the lines which he has just tried. Let him make a straight line of certain length; an inch, a foot, a yard; a right angle, a square, a circle, parallel lines, etc.

"Having exhausted the subject of correctness, test him for rapidity; have him do the same things, and in addition to correctness, require rapidity.

"To correctness and rapidity in such elementary matters let us add the test of power of observation; that is, the capacity to see things, to see them correctly, rapidly, and to note their number, position, quality, etc. This is only to note the sensation obtained from a larger view than the sticks and lines first shown. It is still, however, the mental impression derived from the operation of the sense of sight.

"March the candidates, or class, whom it is intended to examine in this manner for the purpose of ascertaining their respective capabilities, into a room, allow them to stay therein a given period, and bring them out again; then make them describe every article seen. Lessen the period of their remaining in the room to, say, one minute. Try unfamiliar rooms; try a picture; conduct them past an open door at a slow pace, and then ask them, of course individually and privately, to describe every article seen in the room.

"All these tests can be registered for each candidate, and the result will be his mental capacity in each of these regards, correctly expressed in figures.

"Then try him with the sense of hearing, of touch, possibly of smell. You will say this will sharpen his senses. I prefer to say it will sharpen his wits—that it educates him, causes him to correctly note the impression of an object as presented to the senses and as correctly to report it or carry it in his mind.

"All this is but the exercise of the mental quality called attention. After attention or observation, the fundamental mental quality of the human being, comes memory. Thus we may treasure by anthropometry the mental qualities of sensation, impression, attention, and memory.

"These are the faculties by which the mind of man receives its communications from the world. By their means it obtains the raw material, as it were, to be worked up in the laboratory of thought.

"Pursuing the system still further on this fundamental axiom, man holds communication with the outside world through his five senses—and the corollary following, that the action of either of these produces a sensation, sensation produces perception, and perception intelligence—we come to the conclusion that, if we can measure the sensation, we are on the road to measuring the perception, and so on to the understanding and intelligence, and possibly the mind in its more subtle and abstruse operations.

"What a conquest of science would follow if we could be able to measure the sensations produced upon the mind, and passing through the upward scale to calculate the mental force expended, say, by Webster in his great constitutional arguments, or by determining the vividness and depth of perception, and so of understanding; to be, in short, able to calculate, by mathematical formulas, the reserve mental power necessary to make such arguments.

"Decision requires an entire mental operation. It presupposes choice; choice, discrimination; discrimination, impression or sensibility, and this sensation is obtained through one of the organs of sense. The operation of this organ, say, of sight, can be easily measured, and one step is accomplished. Is it not possible to continue it further? May not the differences of this organic physical perception in different individuals denote their differences in mental calibre?

"One child knows a letter or figure, remembers it, understands it, on seeing it once; another requires twenty times, while the learned pig can only spell or count on being shown the same letter or figure a hundred, maybe a thousand times. By the introduction of some such system of mental measurement as I have briefly alluded to I can see how not only the average mental capacity or power of a nation or a people might be measured, the result announced in figures, and a comparison made with other nations, but also how its use might tend to increase that capacity and power.

"Such are the higher uses of anthropometry. The human mental capacity to understand things is nearly allied to its capacity to see things. If one can be done I should not despair of the other. Whatever can be done with either must be by experiment directed by observation, and the experiments must be repeated and the observations recorded. This means counting and measuring, and this applied to man is the science of anthropometry. I have merely mentioned some of its possibilities which seem never to have occurred to the scientists of this country.

"We must content ourselves for the present with obtaining full, complete, and reliable tables of measurements of the physical peculiarities of the various races which inhabit our country. This should be our immediate contribution to the world's science."

AN INCORRIGIBLE BEAR.

"Teddy Roosevelt" the Terror of the New York Zoo.

About six months ago, when Vice President Roosevelt presented the Bronx Park Zoo with a tiny black bear that he had caught alive on his last mountain lion hunt, the little fellow was a very well-behaved youngster, very shy, afraid that everything would eat him, much afraid of the other bears, more afraid of Keeper Hoey, and most of all afraid of the crowds that surrounded the bears' den and ogled him and pointed him out as the "real thing bear." About all that was then necessary to frighten the life out of him was to point a finger at him or to aim a peanut at his head. Then he would run to the uttermost corner of the den, and in a most pitiful fashion show his fear that his precious end had come. But things have changed.

Since those days "Teddy Roosevelt," as the bear is called, has grown into quite a big boy. He has learned the way of the Zoo and its crowds, and has gotten "the swelled head" about something or other. He no longer fears the other bears. Nor does he fear Keeper Hoey, and he has reached a stage where he cares not a tinker's dam whether the crowd points him out or not. There remains but one thing he does fear—a six-foot blacksnake whip that Keeper Hoey has in readiness for use at any moment. This whip lies stretched at full length in front of the bears' den with its handle turned toward whoever may want to enter the bears' den quickly.

"Teddy Roosevelt" seems to be doing everything in his power to disgrace his illustrious namesake, for he has become so mischievous a scamp that even the blacksnake whip is beginning to dwarf in his estimation, for to cut through Teddy's thick coat with a mere blacksnake whip is something like trying to knock remorse into a hair mattress.

Up to quite recently the whip was not brought into play. Now and then Teddy got into a bit of a muss with his elders and was knocked down for his pains—which his keepers said was for the good of Teddy' soul and for his behavior. The big cinnamon bears in the same cage must have thought so, too, for they knocked him down with comparative regularity and with force whenever they could successfully lay paws on him.

A week ago the cinnamon bears were taken from the den, and Teddy and a little Japanese bear had it to themselves. The two got on well together, making faces at and trying to paw the cinnamon bears in the adjoining cage through the bars. But the next night a pair of European bears were put into the cage with Teddy. They are tiny mites, with hardly teeth enough to chew milk and with nothing but sunshine and good will toward both men and the other bears. The little pair was there because the Zoo society had bought them and put them there. The society, however, made a mistake when they did not first consult with swelled-headed Teddy.

The two babies sat in one corner of the den and began to play, much in the manner of puppies. They rolled over and over each other, delighted with their new quarters. Then they wrestled and got on their hind legs and boxed and did a lot of other stunts that amused the crowd and made the little bears themselves very happy. All day long they played, and between acts, when they grew tired, they lay together in one corner, and, with their baby faces side by side, began to spin on their backs, top fashion, in the manner of bears supremely happy.

Teddy did not like the "kid" play around him. He also disliked the spinning business. So one morning he went up behind one of the little bears, named Bounce, and hit her in the back. Bounce is the better half of the young pair. The name of the boy-bear is Towser. Bounce was much frightened when she was "clouted," and more so still when she saw Teddy standing over her with open mouth. Keeper Hoey had seen the performance. He ran to his room to get the blacksnake whip, and before Teddy had fully made up his mind what to do to Bounce, the keeper was inside the den and was "laying it on thick" all over Teddy. Teddy thought quickly, and retired.

All went well that day, though the keeper, knowing bear nature, kept the whip in surprising readiness. Last Wednesday Teddy thought he would try it again. Bounce and Towser were wrestling and trying to bite the little noses off of each other to the amusement of a big crowd, when someone threw a peanut inside the bars for the little one to scramble after. Bounce got it, and was just beginning to eat it, when up rushed Teddy from behind and half hooked Bounce in the back. Then he took the ear of the little one between his teeth and began to make off with her. Never a whimper came from Bounce. She struck out with her tiny paws and defended herself as best she could, while Towser ran after the escaping Teddy and nipped at his legs and tried to claw him.

Teddy was having a lovely time all to himself; Bounce one not quite so lovely. But Keeper Hoey happened to be sitting within sight of the whole performance. He picked up the blacksnake whip, ran into the den, and the way things came Teddy's way was a caution. Up and down the rocks Teddy ran, and at every step the keeper's whip landed steadily on the spots where it did the most good. It was only when the incorrigible Teddy found himself literally and safely up a tree that the keeper decided that he had disgraced him enough for one day.

Bounce limped back into her corner, where she was joined by Towser. Their play was spoiled for the day, but they lay with heads close together, Towser licking and sucking Bounce's ear to make it well from the cuts of Teddy's teeth. As night fell Towser was still sucking the sore ear and Bounce lay spinning away like a good one.

But Teddy will need just one more lesson before he is completely educated up to the ordinances of his keeper, and in the meantime he lives disgraced—the incorrigible Teddy. Another big blacksnake whip lies ever ready to hand.—New York Times.

LAUNCHING LAKE VESSELS

Ingenious Scheme Devised to Overcome Natural Difficulties.

Ships Are Sent Into the Water Sideways Owing to Narrow Space—Great Danger Accompanies the Plunge—Hulls Righted by Ropes.

Shipbuilders on the Great Lakes have devised the most ingenious scheme in use anywhere for shoving a great, ponderous, steel vessel into the water, when she is well nigh completed. These inland vessel constructors who turn out craft as big as ocean liners in the very heart of the country, and most of whose employes never saw salt water, did not devise this method of giving a ship its initial baptism because they considered it superior to the plan which has always been in vogue on the coast; they merely made a virtue out of necessity. The ship yards of the Great Lakes are not located upon the banks of the fresh water seas, but upon contributory rivers or artificial slips. None of these waterways are more than half as wide as a modern lake cargo carrier is long, and so, instead of sliding the vessel into the water endwise, as is the custom all over the world, these giant leviathans toboggan down a monster slide, and take the water broadside on.

To say that the launch of a big vessel on the Great Lakes is more hazardous than a similar event at a ship yard on the seaboard would seem, perhaps, rather a rash assertion, but assuredly it is attended with dangers far greater. Only the workmen are allowed on board, and they have plenty to do in caring for their safety. First one sees the broad, high wall of the steel slipping with accelerating speed downward, then comes the crash of splintering timber as the ponderous mass tumbles from the easy incline, followed by the tremendous splash of the water, dividing under its hull.

The impetus of the plunge from the launching "ways," which look for all the world like a bather's running board magnified a thousand times, hurls the top heavy vessel over with tremendous force. Often it would turn completely over, "turn turtle," as the marine men say, were it not for the ropes, as large around as a man's arm, which extend from the shore to stem and stern and bring the rampant ship up short when gravity would cause her to overstep the bounds of safety. Then, with a sudden revulsion of energy the new mistress of the seas pitches violently in the other direction, and thus she remains for a time rocking heavily this way and that, as if chafing under the bondage of the creaking cables which bind her to the shore.

The original plunge of the vessel into the water has an effect such as might be expected were a gigantic hand of herculean strength to suddenly scoop the liquid and hurl it forward in the form of a great tidal wave. Very frequently the breastwork of water, which a big lake vessel throws up at launching will climb the opposite bank to a point from thirty to sixty feet beyond the regular water boundary. The receding wave plays the same prank, of course, on the opposite bank, and as the vessel rocks to and fro in midstream, billows are pushed alternately to one shore and then the other with gradually diminishing force. People who have miscalculated the force of the on-rushing water or have not been informed of the prospective invasion are often drenched and sometimes injured by the sudden flood.

It is the custom, at the launching of great ocean-going vessels, to make a gala occasion of the event, and usually a large number of guests are invited to take their places on board in order to go down to the sea with the ship when she takes her first dip. Not so on the Great Lakes, however. No one is permitted on board save a few workmen necessary to the carrying out of the operation and an occasional venturesome individual of unmistakably reckless propensities.

No person who has ever witnessed a lake launching at close range will be at all surprised at these precautions. The performance of the individual on board a lake carrier as she takes her maiden plunge very resembles that of the man tossed by the catapult in the circus, except that instead of being thrown forward into the air the man clinging to a post on the vessel's deck must hang on for dear life while the vast mass beneath him jerks and bucks and rolls as if demoniacally resolved to fling him into space. Should the man lose his hold and be hurled forth he would almost surely be instantly dashed to death against the sides of the ship.

There appears to be no limit to the size of the vessel which may be successfully launched in the manner followed in the plants along the northen boundary of the United States. A dozen years ago, when the largest ships on the inland seas were not 300 feet in length, many wiseacres declared that the acme of lake shipbuilding had been reached, since it would be impracticable to launch broadside vessels of greater length and weight, but now steamers 900 feet in length are placed in the water by this ingenious method as satisfactorily as were the craft not more than half as long.

Many of the vessels which are set afloat on the Great Lakes in accordance with the practice outlined are tumbled into the water when they are not more than two-thirds completed, and when none of the machinery has been placed aboard, but others are launched with engines, boilers, and every little detail of equipment complete, so that the vessel may sail away on her maiden voyage within a very few hours after she first touches the water.

That this is possible might appear all the more strange when there is taken into consideration the rather peculiar arrangement of a lake steamer of the present day. Long, lanky craft they are by reason of the narrow channels through which they must pick their way. In order to give uninterrupted play down through the centre of the boat to the machinery which loads or unloads the coal or iron with amazing rapidity, the naval architects and the shipbuilders shoved the engines and boilers compactly together at the stern of the boat and perched the pilot house and deck house at the extreme forward end of the ship. Doubtless the weights are distributed evenly enough when the vessel has digested several thousand tons of cargo, but there is, of course, no cargo aboard when the vessel is launched, and the uninitiated spectator is very apt to harbor a suspicion that it will be pure luck if the craft does not break in two, or if the heavy rear end does not gather greater momentum than the other portion.

The plan of christening a new vessel as followed on the Great Lakes necessarily presents some modifications of the custom in vogue elsewhere. The young lady who smashes the significant bottle of champagne over the bow of a vessel, launched in the ordinary manner, must wield her ribbon-wrapped souvenir as the hull slides away from her. She who christens a lake ship must, on the other hand, spill the sparkling liquid over the prow as the vessel moves past her, just as though she were stationed part way down the toboggan slide and were extending a salute to a party speeding past. There is just a tinge of excitement in the performance, too, for although the big fresh water traveler moves very slowly for a second or two after the last blocks have been cut away, it gathers speed rapidly, and a nervous girl is likely to allow the craft to slip past without the all-important bestowal of good wishes. One young lady who was some time ago placed in such a perdicament recovered herself in time to hurl the bottle after the departing ship with such an excellent aim that the vessel's stem was befittingly baptized. The Japanese custom of releasing doves with bright hued ribbons attached has also been followed to some extent in the launching of lake vessels.

BALLOONING IN FRANCE.

Many New Steering Devices Invented by Army Officers.

The "France Militaire" gives an interesting account of some experiments in military aerostation which are about to be carried out by the French military authorities. In the school of military aerostation at Chalair no great belief is entertained of the possibility of driving an aerial machine of any kind, or of directing its course under adverse circumstances, by means of a motor. It is believed, however, that by the aid of proper apparatus the wind may, in very many cases, be utilized to take a balloon in any required direction, and it is to test the appliances which have been designed for this purpose that experiments are about to be undertaken.

The first series of trials will be carried out over the Mediterranean. The balloon used will be spherical in shape, with a capacity of 3,000 cubic metres. It will be filled with hydrogen, and arrangements will be made by means of a contrivance carried in the car to keep the balloon constantly fully inflated. The balloon will ascend from the isthmus of Sablette, from a strip of beach sheltered by Cape Sicie, in front of the great harbor of Toulon, and the object will be to reach the shores of Algeria. As the wind will probably be favorable in June and July, the ascent is announced for the last fortnight in June, the car being occupied by Count Henry de la Vaulx, who last year won the prize offered for long distance ballooning.

The apparatus carried for the purpose of keeping the balloon in the right direction will consist of two distinct contrivances. One is designed with a view to keeping the balloon for any desired period uniformly at any desired altitude, in order that a layer of atmosphere moving in the desired direction may be utilized. The invention can only be utilized when sailing over water, and it is for this reason that it has been decided to make the first experiment over the sea. Of course, the altitude of a balloon can always be varied by throwing out ballast, or allowing gas to escape, but as neither gas nor ballast can be replaced, the number of times the height of the balloon can be varied by these means is very limited; whereas, by the contrivance now designed, it is claimed that the altitude may be altered whenever and as often as may be desired without defeating the balloon, or changing, except temporarily, the weight carried. The "deviateurs," which it is not pretended will make the balloon travel against the wind, but which it is believed will cause it to move at an angle to the direction of this latter, are of somewhat complicated construction.

As a general description it may be said that they consist of concave plates so arranged that they can be folded together or expanded at will by simply pulling a light cord. These are suspended below the car by two such cords. When these latter are of equal length the deviator does not act at all, and the balloon simply drifts with the wind, but by pulling on and shortening one or other of the cords the plates are made to assume a position more or less oblique to the wind as may be desired, and thus, much as the direction of a boat is moved by a rudder, the balloon is made to deviate more or less from the direction of the wind.—United Service Gazette.

PAID TO SMOKE PIPES.

Men Who Color Meerschaums Earn a Good Living.

Coloring meerschaum is a long and delicate process, and unless a man likes to do a difficult feat there is no reason why he should set himself to the task of putting a beautiful shade on his costly pipe. That is a business in itself, and an experienced smoker knows, or can learn, the location of establishments to which he can take his pipe and have it smoked until the desired color is obtained. Such an enterprise exists in the outskirts of London and makes a fine competence for its proprietor, an Austrian. It is a large house that used to be the country seat of an English gentleman. Hither come every day a score of young men who are the experienced employes of the house. They pass upstairs to the business room in the rear of the house, seat themselves in armchairs and forthwith begin their day's work of smoking meerschaum pipes. Each one knows the art of smoking steadily, neither too fast nor too slow. The tobacco they use is a special blend of the proprietor, for he knows it is only rarely that the right kind of tobacco is used for that purpose. The bowls of the pipes which these young men smoke are covered with wash leather, so that they cannot by any chance be harmed or improperly stained.

The highly accomplished among these young fellows can get away with four ounces of tobacco a day. They are paid well, and they have their regular holidays. Some of them have been with their employer for five years. But it isn't a business in which one may stay a lifetime, for though they appear to be able to smoke for years, night and day, without hurting them, when they get to be old men their occupation has made them too nervous to be useful. The proprietor himself smokes not at all except when he is teaching an apprentice how to go about it. The new hand receives a cheap pipe, and after being told how to go ahead is left to himself to show what he can do. There are prize competitions, and these thirty newly arrived young men, who are on an upper floor, when they become proficient are graduated to take their seats with the notables on the second floor back.

This kind of work as a rule takes all the time and attention of the men, but some of them are so perfect that they can devote themselves to designing shapes and figures for new pipes, special attention being given to the possibility of producing quaint effects in the coloring.

The best meerschaums, it is said, come from Turkey, and the designs are worked out and cut upon the meerschaum in Vienna.

Probably the class who are the best buyers of those colored-to-order meerschaums are collegians, who want to show fine pipes, but who have neither the patience nor the skill to produce the effect themselves. —New York Press.

FATE OF THE PORCUPINE.

Remains of One of Perry's Vessels in Ferrysburg, Mich.

Purchased From the Government After the War and Used in the Merchant Trade by a Missionary—Beached and Abandoned for Years

Lying in a heap of debris in the back yard of Charles Bolthouse at Ferrysburg, Mich., is all that is left of the old sloop Porcupine of Commodore Oliver Hazard Perry's famous fleet—one of the little gun vessels of one gun which sailed into close action with the British squadron at the Battle of Lake Erie and won the battle after the heavy Lawrence had been riddled and sunk.

After several years as a diminutive man-of-war on the lakes, sixty years as a lake trader, and a few months as a fisherman's boat, and twenty-four years as a sunken wreck in Spring Lake, the sloop now is falling to pieces in the yard of the man who rescued it from its grave in the sand and water. The stern post has been taken from the debris and will come into life again as a part of the porch of a Michigan physician's summer home.

After the war the Porcupine was purchased from the Government by the Rev. Mr. Ferry, a missionary to the Indians, who was located at Grand Haven, Mich. The vessel was used in merchant trade, sailing the lakes with salt in its hold and lumber on its decks. After sixty years of good service it became unseaworthy, was abandoned by trade, and then taken up by lake fishermen, but proved of little value to them. After a few short voyages she was sailed from Lake Michigan up Grand River to Spring Lake, and there beached. Here it lay for twenty-four long years with the merciless waves dashing over it. Several attempts were made to raise it from its watery grave, but no one was successful until Mr. Bolthouse became interested. He, with the aid of a large capstan and two sets of blocks, lifted it from the water. He had secured the whole bottom and the sides as far up as the deck, the ribs being intact. It was filled with sand and the great weight made it almost impossible to move it, but it was hauled a couple of blocks and finally placed in the back yard of its rescuer, covering sixty-five feet of ground.

When taken from the water its timbers, in which British bullets are still embedded, were perfectly sound, but the rays from the sun soon began to rot the wood, and what is left now is fast decaying and mingling with mother earth.

The brave little sloop was strong with its one gun in the battle of Lake Erie, and its end is coming on the shore of a peaceful lake, which is a summer resort of Michigan people.

Its structure from the water side was first a planking of Southern pitch pine, then a layer of tar paper, and then huge blue oak beams put together by hand-made iron clamps and spikes. The most interesting part of the wreck is what is left of the keel, the oak planks being in a fair state of preservation. Three feet of the stern post, with the iron rudder shoe, is also in fine condition. This part of the little warrior has just been purchased by a Michigan surgeon, who has his summer home on Spring Lake. The relic is placed on one of the porches fastened to the side of the cottage by one of its own wrought iron bolts.

The sloop, which has reached this quiet end, was one of the finest which Commodore Perry, then a lieutenant, had built at Presque Isle to met the British on the lakes. When the lieutenant to whom was given this gigantic task was sent to Lake Erie he found himself the commander of a fleet which did not exist. The trees which formed the beams of his vessels still were growing on the shores of the lake. He had neither men-of-war, men-of-warsmen, or guns. He had energy, however, and that was enough.

The Porcupine was one of the vessels thus rapidly constructed. It was destined to be one of the small members of the fleet which met the enemy and took them captive. One gun was its armament. Two large brigs to mount twenty guns each were laid down at Presque Isle, and the small gun vessels were quickly completed.

What the Porcupine, with its larger and smaller sisters had to do is best described by what they did do after they had defeated the British under Captain Barclay. The Porcupine had to help in driving the British out of Detroit. It conveyed a part of the American troops to landing in Upper Canada. These troops won the battle of the Moravian towns on October 5, 1813, which placed the upper part of the province in the hands of the Americans. Upon this little vessel and the other boats of the fleet depended the American supremacy on the lakes.

Under Perry's energetic management two large brigs, the Porcupine, and several other small gun vessels soon were launched. The spring of 1813 was passed in securing guns, shot, and other supplies, and a draft of men to put behind the guns. Perry seemed never to sleep. By August he had his fleet and 200 men, had been raised to the rank of captain, and less than five months had been sufficient to convert the trees which were growing on the larke shore into armed vessels.

When the little Porcupine set out to receive its baptism it was in the company of the following boats:

Lawrence, 20 guns, Captain Perry commanding; Niagara, 20 guns, Captain Elliott commanding; Caledonia, 3 guns, Mr. McGrath commanding; Ariel, 4 guns, Lieutenant Packett commanding; Trippe, 1 gun, Lieutenant Smith commanding; Tigress, 1 gun, Lieutenant Conklin commanding; Somers, 2 guns, Mr. Almy commanding; Scorpion, 2 guns, Mr. Champlin commanding; Ohio, 1 gun, Mr. Dobbins commanding.

The fleet was lying at Put-in-Bay on the morning of September 10 when the lookout at the masthead of the Lawrence discovered the enemy coming from the northwest. The signal was at once given for all vessels to get under way. At the outset the American vessels were confronted with a problem which threatened for a time to leave them at a serious disadvantage. The peculiar armament of Perry's ships made it necessary for them to obtain the weather gauge of the enemy, and no way of doing this was apparent but by beating around some small islands that lay in the way. Perry thought he did not have time for this maneuvre and was about to give the order to pass to the leeward of the British vessels, when the wind shifted from southwest to southeast and enabled the American vessels to pass in the desired direction to gain the wind.

In a gallant array the English vessels came down for the attack. The line was formed with the Chippeway in the van, then came the Detroit, Captain Barclay's vessel; then in the order named were the Hunter, Queen Charlotte, Lady Prevost, and Little Belt. In armament the American fleet has been conceded the superiority by many historical writers, but to be effective its guns required a short range. Infighting where the cannonades of the little gun vessels could fill the enemy with grape and canister was the plan mapped out for the Porcupine and its small sisters.

As the two fleets drew near to each other there was a decided difference in their appearance, and the comparison was not in favor of Perry's boats. The British line was perfect. The American was ragged. The twenty-gun brigs were leading, and the Porcupine had a position astern.

Captain Barclay had planned to win his battle by blowing the American flagship out of the water at the outset. He had been eager for this contest with the American "fresh water sailors" and volunteer riflemen. He succeeded in carrying out the first part of his plan. The united attacks of the three vessels almost dismantled the American brig, besides causing great slaughter on board it.

After two hours and a half of this contest the wind freshened and the two squadrons drew slowly ahead. The Lawrence fell astern and partially out of the contest. While this unequal battle between the Lawrence and its three opponents had been taking place the Porcupine and the smaller ships had been unable to get into the thick of the battle. Sweeps were put out and every breath of wind was utilized to the utmost. By dint of these expedients they drew into range and gradually closed. As they did so Captain Perry found himself in a disabled and useless ship, with his decks full of dead and wounded, and unable to get into the fight which was slowly drawing away. He then decided to abandon the Lawrence. Attended by a few men he dropped into a boat and was rowed to the Niagara. The colors of the wreck which had been the Lawrence were hauled down. Captain Barclay saw success for his plan of battle as the Lawrence dropped its flag. One of the two larg American boats was disposed of, and the battle was left to the Niagara and the one and two gun sloops such as the Porcupine.

His men lined the sides of their ships and broke into cheers. As if by common consent there was a cessation of the firing while both sides prepared for the final clash. This was about 2:30, and the battle had been on since noon.

As they prepared to engage anew the wind freshened again and the American vessels were able to close rapidly with the enemy. The Niagara, leading the small vessels, bore steadily down to within half pistol shot, and the Americans had the battle to their liking. The Niagara broke into the British fleet with the Chippeway and the Lady Prevost on one side and the Detroit, Queen Charlotte, and Hunter on the other.

In passing both broadsides were discharged into the enemy. It ranged ahead of the ships and continued the short and deadly fire. Its effect was telling. The Porcupine, with the little ships, had followed the Niagara into the heart of the British squadron, and with their cannonades and single guns were delivering an effective fire at the range they had been seeking for nearly three hours. Close discharges of grape and canister tore the English ships wide open, dismantled them, and filled their decks with dead and dying.

There could be no length to such a contest. It had taken the English vessels nearly three hours to dismantle the Lawrence, but that was at long range. In this deadly conflict the decision was a matter of moments. Smoke from the rapid broadsides covered the contestants, and the men worked unseeing and unseen.

Within fifteen minutes after the Niagara had broken into the heart of the English fleet there was a cry passed among the small vessels that the British had struck. Then an officer of the Queen Charlotte was seen through the smoke standing on the taffrail of his ship waving a white handkerchief tied to a boarding spike.

Both sides had suffered about equally in the decisive action. The manner in which the Lawence was cut up was almost without parallel in naval warfare. When Perry left it it had but one gun in use on the starboard side, or that on which it was engaged. The last time this was discharged Perry himself aided in firing it. Of its crew twenty-two were killed and sixty-one wounded. The Niagara, in its fierce, short fight in the centre of the English squadron, in which the English crews were cut to pieces, had two killed and twenty-five wounded, about one-fourth of all at quarters. The smaller vessels divided the rest of the loss in an average of one man killed and several wounded. The total loss to the fleet was twenty-seven killed and ninety-six wounded.

The American crews had come into the battle suffering from cholera morbus, and many were totally unfit for duty. Captain Perry, himself, was suffering under debility from a recent attack of lake fever, and was not in a proper condition for service when he met the enemy.

The English lost forty-one killed and ninety-four wounded. All the vessels were considerably injured in their hulls, the Queen Charlotte suffering most in proportion. Both the Detroit and the Charlotte rolled the masts out of them at anchor in Put-in-Bay two days after the engagement in a gale of wind.

While the historians have conceded a superiority of metal to the American fleet, a greater disparity than that in guns was apparent in the crews. In this the superiority should have been with the English. The first lieutenant of the Lawrence testified before a court of enquiry that there were but 121 men and boys "of every description" on board the flagship, and that only 103 were fit for duty when the ship went into action. The Niagara was in nearly the same condition. A part of the crews were militia. The British also had a considerable proportion of soldiers on board, but neither side claimed that this was a serious disadvantage in smooth water. Under such conditions the soldier was probably as efficient as the sailor.

Instantaneous results attended the winning of the battle. The four smallest of the captured vessels were fitted up as transports and the American vessels, with the exception of the Lawrence, were employed in the same duty. They carried the troops which won Upper Canada from the English. Captain Perry ascended to Detroit on the 27th in the Ariel and recaptured the town.

For gallant conduct in the battle of Lake Erie Captain Perry received a gold medal from Congress. The same award was made Captain Elliott. Rewards were bestowed generally upon the officers and men of the ships. The nation has long considered this fresh-water victory one of the most notable of its achievements in war.

Where the other vessels of Perry's little squadron, now are is a matter of conjecture. But the Porcupine, minus its one gun, its hull filled with sand, its stern post missing, its planks rotting, and its name almost forgotten, is stranded on the sand, a curiosity to the residents of a summer resort. This will be the end of one of the ships which enabled Perry to send his famous message: "We have met the enemy and they are ours."

As a Last Resort.

(From the Cleveland Plain Dealer.)

"There has been considerable said about the per cent of fare the conductor thinks belongs to him over and above his salary, and some very witty things have been said about it. Even the Broadway back platform philosopher has his digs at them," said a Cleveland professional man the other day to a "Plain Dealer" reporter.

"I once heard of a fellow, much under the influence of liquor, who got on the train to go home after enjoying himself at a picnic. He slipped into a seat and fell asleep. After the train pulled out the conductor came into the car and called 'Tickets!' The picnicker was too weary to respond, and so the conductor poked him up a little. The fellow roused up, fumbled in one pocket, then another, till finally he pulled out a very ragged bill and handed it to the conductor. After examining it carefully the latter said: 'Say, my friend, see here. I can't use this.'

"The passenger pushed himself up on his elbow and remarked: 'What's (hic) that you shay?'

"'I can't use this,' the conductor replied.

"'Well, give it (hic) to the comp'ny zen,' remarked the weary but generous-hearted man, dropping back into the seat, confident he would be put off at his destination."

JACK'S QUARTERS AFLOAT.

American Sailors Have More Comforts Than Any Others.

How the Bill of Fare Ordered by Congress Is Served—Comparison Between Treatment Accorded Crews Under This and Other Flags.

The American deep water sailor has long been considered a particular ward of the nation, and as such he is vastly better cared for on shipboard than is the sailor of any other nation. Much against his will he is encouraged to save his money. Even a carefully developed bill of fare has been worked out for him and made a part of the shipping laws of the country. These facts have lately been impressed upon the shipowners of Great Britain by the arrival at London of the steamship Northwestern, the first vessel to enter that port with clearance papers from Chicago.

The Northwestern is a steamer of the Great Lakes, the first of a new line which will try to establish a regular service from Chicago through the lakes, canals, and St. Lawrence River and across the Atlantic to London. Her sailors are lake sailors, and lake sailors are treated like no other sailors in the world. They have much the same rights and privileges as have shore laborers. They have their labor unions and dictate, to a certain extent, their own scale of wages and the amount and nature of the work that may be required of them. Voyages on the Great Lakes are of too short duration and the chances for deserting are too numerous for lake shipowners to dictate to their sailors or to permit the owners to impose anything like the terms which the ordinary sailor endures.

It is no wonder that London seamen have stood in open-mouthed astonishment at the good fortune of the Northwestern's crew. They have been surprised at the ease and simplicity of discipline. The comforts provided for the men have caused wonder, as well as the liberality of their wages. They have also wondered at the way the lake sailors respond to fair treatemnt instead of abusing it.

Although the Northwestern is a lake boat, and is in consequence different in many respects from the deep sea "tramp" or sailing vessel, she is not by any means the only vessel from which English, German, French, and Russian shipping can learn valuable lessons. Sailors have better quarters and are uniformly better treated on American ships than they are on vessels flying flags of other stripes and colors.

"The quarters for sailors on American ships have not changed greatly in the last ten years," said a large owner of seagoing vessels to a "Tribune" reporter yesterday, "but they are still far ahead of anything foreigners have ever put up. There may not be much difference in the houses, but American captains insist on cleanliness. That the American sailor is better fed than the Britisher or any other foreigner no one can doubt who has ever read the bill of fare prescribed by the Government."

The days of the old forecastle, hung away in the dark hold under the forward mast, are gone forever, no matter what flag the vessel may carry. The forecastle on new steel ships is in a deckhouse, well forward. On American ships it is ventilated like the skipper's cabin in the stern of the ship, has a skylight and apparatus for heating. The men used to eat with their plates on their knees; now they have a mess table with racks to hold the dishes in place in rough weather. Tanks on top of the house supply the running water, and the reason modern forecastles do not have bathtubs is that the sailors would rather take their baths on deck by throwing cold water over one another.

The difference between American and British ideas of comfort for crews is well brought out by two new ships of the Standard Oil Company's fleet which are now loading at Constable Hook and the Tidewater refineries. The wheelhouse at the stern—which, by the way, has been considered necessary on sailing ships only within the last few years—tells the tale. On the Acme, a steel four-master built at Bath, Me., a few months ago, the wheelhouse is a solid steel structure like the pilot-house of a steamer. It has plenty of windows, and protects the helmsman from the weather on every side. The Brilliant, a still larger ship built by Russell, at Glasgow, has a steel wheelhouse which resembles the scoop of a large dredger. It is entirely open in front, affording protection only from following waves, and leaving the man at the wheel almost as much at the mercy of the wind and cold as he was when the wheel was absolutely unprotected. Here is the difference in the ideas of sailors' comfort as expressed by the mate of the Brilliant:

"We don't want to make the men too comfortable. If we had the wheelhouse entirely closed in and made the room warm and comfortable, like they do on the new American ships, the sailors would be sitting down and going to sleep the first thing we'd know. No, sir, too much comfort spoils a sailor, especially a British sailor."

On the Standard Oil Company's new American ship the Acme an effort is made to keep the apprentice boys away from the rest of the crew. They are the youngsters who will some day command the vessels of the company's fleet. To quarter them with the crew would be to make bad boys of them, according to the officers of the Acme. For that reason she has a deckhouse amidships for the apprentice boys and the under officers. They have their own mess table, lockers, comfortable bunks, and plenty of room.

The officers' quarters on both American and British ships have been growing more comfortable and elaborate as shipbuilding has advanced. The cabin of the Acme consists of a large saloon and dining room, with the captain's stateroom on one side and on the other the steward's pantry and rooms for the officers. It is finished in white enamel and the saloon portion is furnished in green leather. Morris chairs and comfortable sofas are scattered about. The hardwood floor is covered with rugs. There are oil paintings on the walls. Sofa cushions and bits of fancy work tell of a woman's presence, for Captain Laurence is usually accompanied by his wife. The Acme is the pride of the company's American fleet, and for very good reasons.

The cabin quarters in the Brilliant are patterned after the British idea. There are more mirrors, nickeled lamps, and panel work. All of the rooms are finished in birdseye maple and black walnut. In the dining-room there is a fireplace, with fittings of marble. In the saloon, or after cabin, there is an elaborate sideboard with cut-glass furnishings.

Twenty years ago a sailor would have laughed at the idea of a steam-heated forecastle. Today such quarters are common on American vessels of a certain class—the big schooners which ply in the coastwise trade. These vessels carry small crews, from seven to ten men. The spread of canvas is enormous, and the crews would be unable to handle the ship without the aid of steam. For this reason a small engine is kept running all the time, and steam for heating purposes is supplied to all parts of the ship.

There are vessels sailing out of this port which are absolutely without forecastles. The officers and crew live together in a cabin at the stern. They eat from the same table and have exactly the same fare, except for the skipper's private bottle of "sea sherry," which would be called whisky on shore. Nearly all of the fishing schooners are quartered in this way, and likewise many of the lumber vessels which bring cargoes from Nova Scotia to the lumber yards on the East River.

After all, however, the difference between the comforts of American sailors and those accorded to the seamen of other nations lies more in the food provided than in the quarters. British skippers are noted for keeping their men on short rations. An American captain would not dare go below the scale provided by law. If he did, the crew would complain at the first port.—New York Tribune.